REMARKS

Favorable reconsideration of the application is respectfully requested in light of the amendments and remarks herein.

Upon entry of this amendment, claims 1-20 will be pending. By this amendment, claims 1, 4, and 11 have been amended. No new matter has been added.

§103 Rejection of Claims 1-3, 7-10, 11-13 and 17-20

In Section 4 of the Office Action, claims 1-3, 7-10, 11-13 and 17-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Morishima (EP 0795845) in view of Lindgren (WO 99/65221). Claims 1 and 11 have been amended to address the rejection.

In the Background section of the Specification, it was disclosed that "[i]n the first mobile terminals on the market, the sound generating unit only comprised a small number of prestored melodies and/or tones, from which the user could select his or her preferred ringer or alarm signal. Some of the more recent mobile terminals of wireless telecommunication systems present the possibility of creating an own melody within the limited range of one or two octaves, whereby the tone for the melody composed by the user is preset and cannot be selected by the user." *Background of the Specification, page 1, lines 15-21.*

To solve this problem, embodiments of the present invention provide sound generating device and method having prestored sounds including a sound and pitch that can be selected by the user. For example, the structure of sound generating device claim 1, as presented herein, includes:

> "*memory means* (5) for storing sounds in the form of waveforms so that each waveform corresponds to a sound, wherein each sound has a typical frequency distribution and digitally sampling such a frequency distribution with a predetermined number of samples gives a waveform;

selecting means (3) enabling the selection of a sound and a pitch for said selected sound;

calculating means (6) for calculating, on the basis of a preset calculation rule, a sound table from the samples of the stored waveform which corresponds to the selected sound by calculating additional samples in between respective adjacent samples of said waveform;

reading means (8) for reading out a number of the samples but not all of the samples from said calculated sound table, wherein the number of said samples read out varies depending on said selected pitch for said selected sound; and

output means (2) for outputting a sound on the basis of said number of said samples read out from said reading means.

(emphasis added)

Thus, claim 1 includes a limitation that sounds are stored in the form of waveforms, wherein each sound has a typical frequency distribution, and digitally sampling such a frequency distribution with a predetermined number of samples gives a waveform. Therefore, the sound generating device of claim 1 provides prestored sounds, such as sounds of musical instruments, human voices, and animal sounds with various sounds and pitches. *See Specification, page 2, lines 8-20 and page 3, line 36 to page 4, line 13.*

It was stated that Morishima does not teach that the musical notes are sound waveforms generated by digitally sampling a frequency distribution. *Office Action, page 3.* Lindgren was cited for reciting this limitation, namely, for reciting "memory means for storing sounds in the form of waveforms, so that each waveform corresponds to a sound, wherein each sound has a typical frequency distribution and digitally sampling such a frequency distribution with a predetermined number of samples gives a waveform." *Office Action, pages 3- 4.*

Embodiments of the present invention relate to a sound generating device and sound generating method that enable a user to choose any kind of sound to be generated and the pitch in

which the sound is to be output. Hereby, a variety of sounds is pre-stored in the form of waveforms. In other words, each stored waveform corresponds to a sound. If a user then selects a sound and a pitch for the selected sound, a sound table is calculated on the basis of a preset calculation rule from the samples of the stored waveform, which corresponds to the selected sound. From the calculated sound table, a number of the samples is read out depending on the selected pitch for the selected sound.

By contrast, Lindgren does not suggest a telecommunication device in which a user can select a pre-stored sound and also a pitch for the sound, in which the telecommunication device processes the sound to be output with the selected pitch. In fact, in Lindgren a user can only select a sound to be output, and cannot choose or influence the pitch of the output sound. *See Lindgren, page 3, lines 14-31.* Further, Lindgren is narrowly aimed at providing an improved interface for acoustical programming of a ring tone pattern. In the disclosure of Lindgren, information related to desired portion of acoustic input (e.g., tones, pauses) is extracted, while noise and other imperfections are not, resulting in improved acoustical quality. Lindgren does not discuss a pitch to be selected or output; rather it discusses extracting tone-related parameters such as frequency and duration. *See Lindgren, page 7, lines 6-11.* Further, the portion of Morishima cited for disclosing "selecting a sound and a pitch for said sound to be generated" does not disclose "enabling the selection of a pitch for said sound," as claimed, but rather discusses carrying out "a call announcement for announcing reception of a call by a melody sound freely composed by a user." *Morishima, col. 1, lines 33-36.* Figure 3 is also cited for disclosing the selecting means, yet lines 33-36 are not correlated with the Fig. 3 in the specification. *See Morishima, col. 1, lines 33-36.* Therefore, Morishima and Lindgren, alone or in combination, fail to disclose or suggest *memory means* (5) for storing sounds in the form of

waveforms so that each waveform corresponds to a sound, wherein each sound has a typical frequency distribution and digitally sampling such a frequency distribution with a predetermined number of samples gives a waveform; *selecting means* (3) enabling the selection of a sound and a pitch for said selected sound; *calculating means* (6) for calculating, on the basis of a preset calculation rule, a sound table from the samples of the stored waveform which corresponds to the selected sound by calculating additional samples in between respective adjacent samples of said waveform; *reading means* (8) for reading out a number of the samples but not all of the samples from said calculated sound table, *wherein* the number of said samples read out varies depending on said selected pitch for said selected sound; and *output means* (2) for outputting a sound on the basis of said number of said samples read out from said reading means *(emphasis added)*.

Further, independent claim 1 has been amended to clarify that the calculating means calculates additional samples in between respective adjacent samples of the waveform. The reading means of claim 1, as amended, reads out a number of, but not all of, the samples from the calculated sound table, whereby the number of samples read out varies. By contrast, Morishima fails to teach or suggest adding additional samples in between existing samples and reading out only a number of these samples as defined by amended claim 1. Lindgren also fails to teach or suggest the calculating means and reading means of claim 1 that include these limitations. Therefore, Morishima and Lindgren, alone or in combination, fail to teach or suggest all the limitations of claim 1.

Based on the foregoing discussion, it is maintained claim 1 should be allowable over Morishima and Lindgren. Furthermore, since independent claim 11 closely parallels, and includes substantially similar limitations as, independent claim 1, claim 11 should also be allowable over Morishima and Lindgren. Since claims 2-3, 7-10, 12-13 and 17-20 depend from

one of claims 1 and 11, claims 2-3, 7-10, 12-13 and 17-20 should also be allowable over Morishima and Lindgren.

Accordingly, it is submitted that the rejection of claims 1-3, 7-10, 11-13 and 17-20 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

§ 103 Rejection of Claims 4-6 and 14-16

In Section 5 of the Office Action, claims 4-6 and 14-16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Morishima in view of Lindgren, and further in view of Otsuka *et al.* (U.S. Patent 6,021,388; hereinafter referred to as "Otsuka").

Based on the foregoing discussion regarding claims 1 and 11, and since claims 4-6 and 14-16 depend from claims 1 and 11, respectively, it is submitted that claims 4-6 and 14-16 should be allowable over Morishima and Lindgren. Further, since Otsuka was cited for disclosing that the calculating means (6) calculates said sound table on the basis of an interpolation calculation, Morishima, Lindgren and Otsuka, alone or in combination, fail to teach or suggest all the limitations of claims 1 and 11. Therefore, dependent claims 4-6 and 14-16 should be allowable over the combination of Morishima, Lindgren and Otsuka.

Accordingly, it is submitted that the rejection of claims 4-6 and 14-16 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

Conclusion

In view of the foregoing, entry of this amendment, and the allowance of this application with claims 1-20 are respectfully solicited.

In regard to the claims amended herein and throughout the prosecution of this application, it is submitted that these claims, as originally presented, are patentably distinct over the prior art of record, and that these claims were in full compliance with the requirements of 35 U.S.C. §112. Changes that have been made to these claims were not made for the purpose of patentability within the meaning of 35 U.S.C. §§101, 102, 103 or 112. Rather, these changes were made simply for clarification and to round out the scope of protection to which Applicant is entitled.

In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicant's representative at the telephone number written below.

The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account 50-0320.

Respectfully submitted,

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